





## 1) GENERAL INSTALLATION GUIDELINES

The tunnel must be as low as possible and as far forward as possible.

The propellers must not protrude beyond the hull line.

The ideal position of the tunnel is such that there is at least the depth of one tunnel diameter from the water line to the top of the fitted tunnel.

Decreased performance of the SUPER POWER due to inadequate immersion depth can be compensated by fitting the tunnel as far forward as possible (increasing lever arm movement).

The SUPER POWER hydraulic thrusters can be fitted vertically, horizontally or tilting.

**IMPORTANT:** When using tunnels of different thickness (example: metallic tunnel) it is imperative that the area between the drive leg/gasket and the motor support, matches the thickness as indicated in the table on the drawing "Positioning & Measurements" at back of manual and that the motor support is stable. If you have less than 7 mm thickness, you will require an extra hard rubber gasket between the motor support and the tunnel.

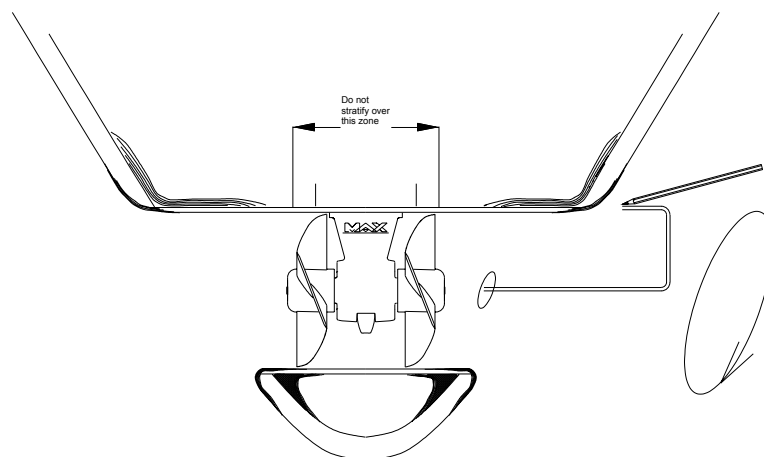
## 2) TUNNEL

When the final tunnel position is determined (and all dimensions have been checked), mark the centre of the tunnel's position and drill a  $\varnothing$  10 mm hole. Make up a metal compass from 8 mm rod.

Fit compass into the  $\varnothing$  10 mm holes and trace the form of the tunnel on to the hull (elliptical).

After cutting out the elliptic hole, disc the interior surface of the hull, by approx. 10 to 15 cm around the holes.

The outside surface of the tunnel is then ready to be fibre-glassed.



Fit the tunnel and mark the areas to be fibre-glassed. Sand these areas inside and out.

In certain installations it is preferable to drill the position of the thruster support before the installation of the tunnel.

Refit the tunnel. Apply reinforced fibreglass filler to all areas, taking care that you fill the gap between hull and tunnel. Stratify with a minimum of 8 coats of material and ISOPHTALIQUE RESINE alternating with mat and roving.



#### 4) THE HYDRAULIC MOTOR AND ITS ADAPTER

Do not separate the motor from its adapter.

Insert the lower metal coupling on the greased leg shaft.

Fit the flexible coupling, then the motor and its adapter, tighten the screws ( $\varnothing$  10mm) to a torque of 40 Nm.

**IMPORTANT:** Using a screwdriver push the lower coupling up towards the motor, the contact between these parts must be without any slack or play.  
Tighten locking screw for drive key to ensure coupling is kept in place.

#### 5) PROPELLERS

Check the tightness of the oil drain screw (8 mm Allen Key) and the anode (a 10 mm key).

**IMPORTANT:** To prevent limestone deposits from forming (causing damage to the joints), we highly recommend applying silicone grease to the shaft and the joints before assembling the propellers.

Fit the propeller pins and propellers

**NOTE:** Position the propeller blades opposed and not in line with one another.

Make sure that the propellers turn freely. A certain amount of resistance from the motor is normal.

Tighten the 22 mm nuts on each propeller to 27 Nm.

Ensure correct protection of hands against the propellers blades.

#### 6) PROTECTION GRILLS

With a shallow tunnel installation, we recommend that you protect the propellers by fitting horizontal protection grills. These grills will however modify thruster performance.

#### 7) HYDRAULIC (general remarks)

A typical installation of the hydraulic power thruster requires the following elements:

- oil reservoir/tank
- hydraulic pump
- directional control valve
- hydraulic motor
- circuit piping
- oil cooler (depending on type of installation)

The **oil reservoir/tank** with return filter and suction strainer should be as close to the pump as possible and on charge. Meaning that the level of the oil should be above the pump, preferably with the oil tank above the water line.

For future maintenance, make sure that the return filter is easily accessible. An isolation valve can be fitted to the suction.

The **pump** can be driven by either an internal combustion engine (crankshaft pulley or gearbox PTO) or an electric motor. Depending on the speed and choice of drive, **but** should always comply with the rated pressure/flow of the thruster.

**Direct PTO:**

**PTO with clutch:**

On a DC or AC **electric motor** the following types of pumps can be used:

### AC MOTOR:

- (\*\*\*) always require oil cooler
- (\*\*) require oil cooler when time of operation exceeds 15 minutes,
- (\*) oil cooler not necessary

**Note:** The above choices also depend on capacity of the oil tank etc.

The piping can be flexible or a mix of rigid and flexible type and should have crimp-connected fittings.

Use synthetic, mineral or vegetable hydraulic **oil**, to ISO standard 32 to 48.

**SUPER POWER Series 225 HYD: Flow = 33/35 litres/Min    Pressure = 200/220 bars.**

## 9) HYDRAULIC CUSTOM PACK.

Tailor made according to specifications.

**ELECTRO PUMP PACK:**

- 1 x Electro Pump 24 Volt
- 1 x Power Relay
- 1 x Fuse Holder
- 1 x Power Fuse

### HYDRAULIC CONTROL PACK (12 V / 24 V):

- 1 Directional Control Valve (Including pressure gauge & Pressure Relieve Valve)
- 1 Control Panel.

### RESERVOIR PACK

Oil Reservoir 12 / 18 / 40 litres including: Return Filter

Suction Strainer

Oil Level Sight Gauge/ Thermometer

Filler Cap

Motor Drain Connection

**INTERIOR DIAMETERS AND MODULES** of the piping between the hydraulic elements.

M4 = 1/4"

M5 = 5/16"

M6 = 3/8"

M8 = 1/2"

M10 = 5/8"

M12 = 3/4"

M16 = 1"

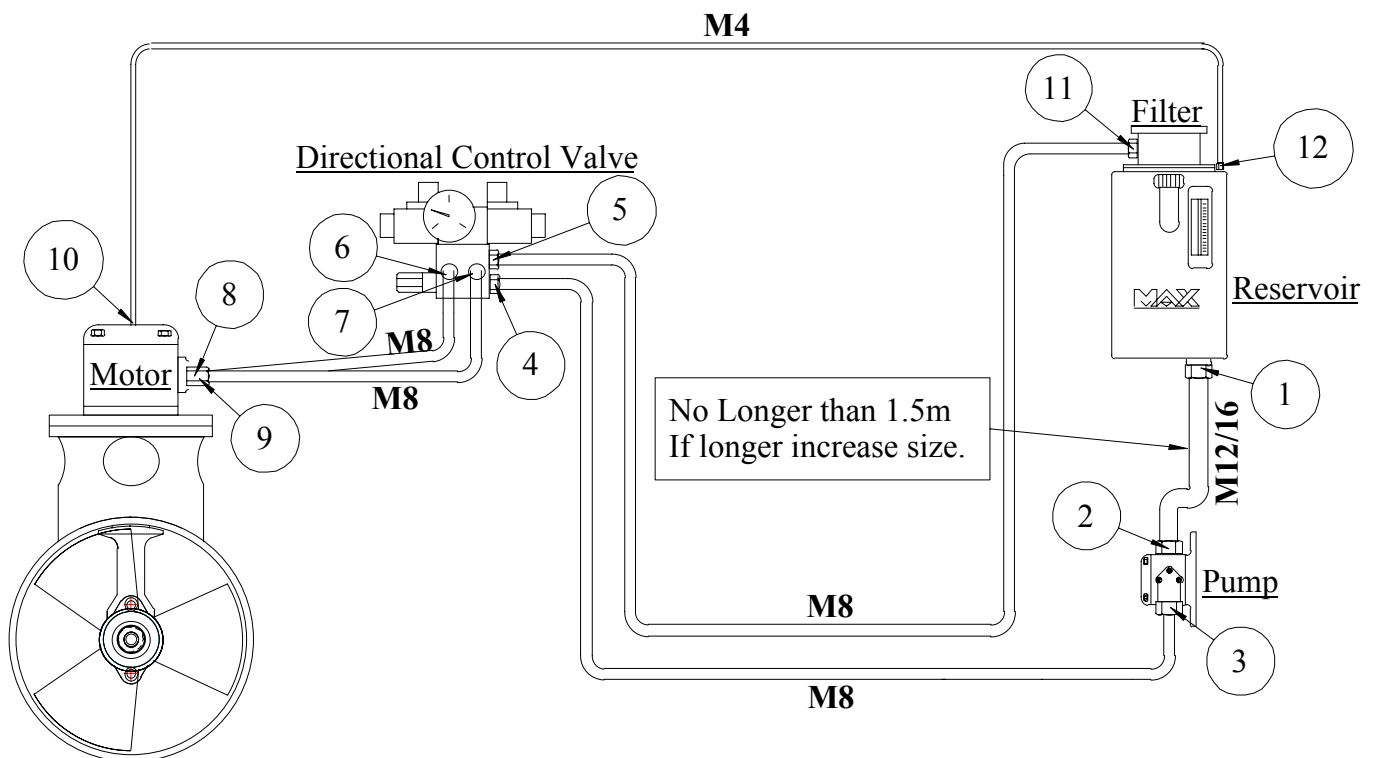
**INTAKE DIAMETERS** of standard hydraulic elements MAX POWER.

1 / 2 / 11 = Female **BSP 3/4"**

4 / 5 = Female **BSP 3/8"**

3 / 6 / 7 / 8 / 9 = Female **BSP 1/2"**,

10 / 12 = Female **BSP 1/4"**



## 10) MAINTENANCE

In order to ensure peak performance from your SUPER POWER, the tunnel, the leg and the propellers must be kept clean.

**IMPORTANT:** In order to prevent chalky deposits, which cause damage to the oil seals, we recommend cleaning the shaft and the oil seals first, then applying a layer of silicon oil before assembling the propellers.

**ANNUAL BASIS:** CHANGE the anode (if necessary).  
CHANGE drive leg oil, if classic (bronze) leg.  
CHECK the oil and the hydraulic filtration circuit (only if necessary).

**EVERY 5 YEARS:** DRAIN hydraulic oil system and change the filter and refill.

THE MAX-POWER TEAM WISHES YOU SUCCESSFUL MANOEUVRING AND  
ENJOYABLE CRUISING.

**IT IS IMPORTANT TO KEEP THIS MANUAL ON BOARD!**



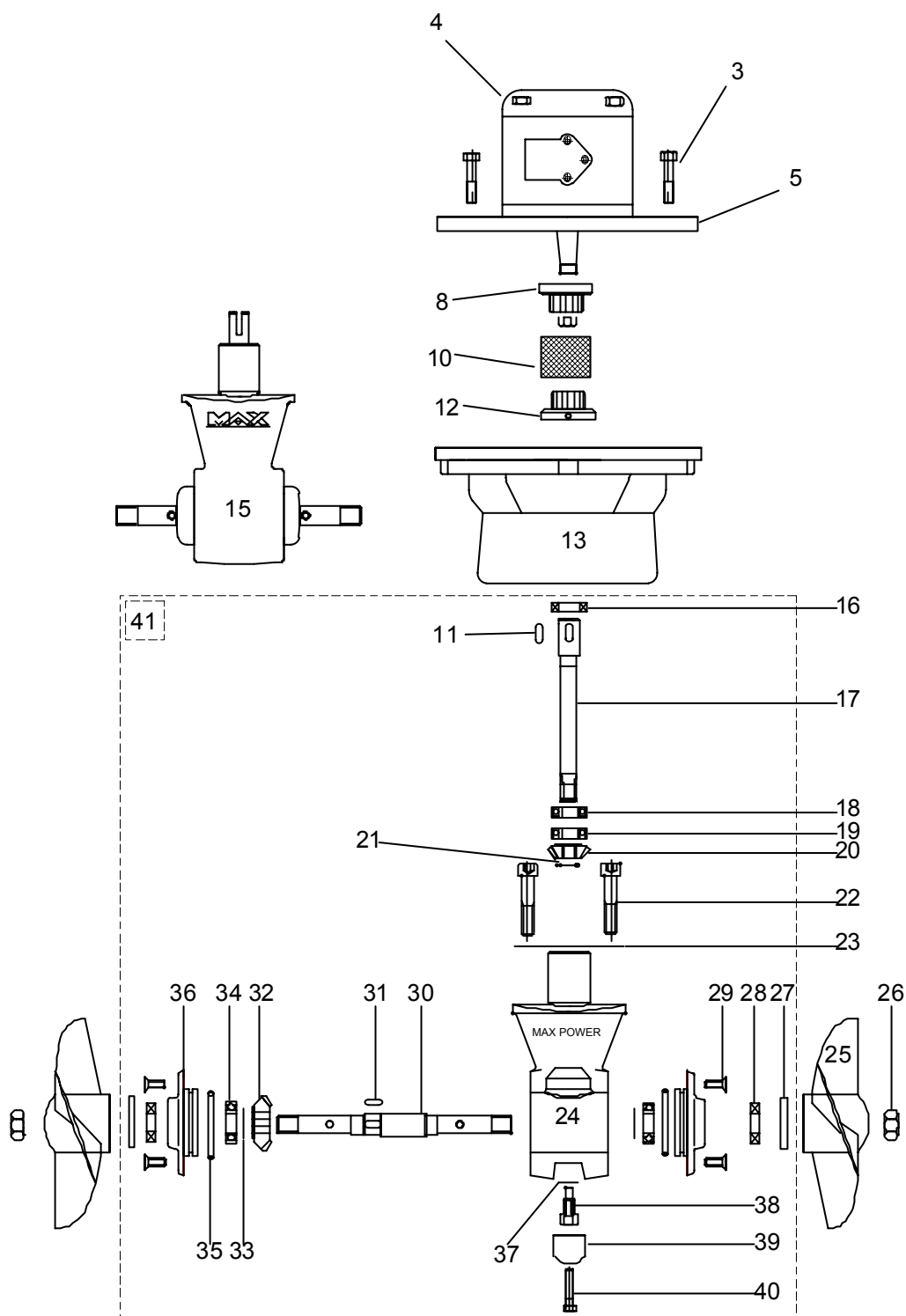


## SPARE PARTS LIST

### SUPER POWER Series 225HYD DUO

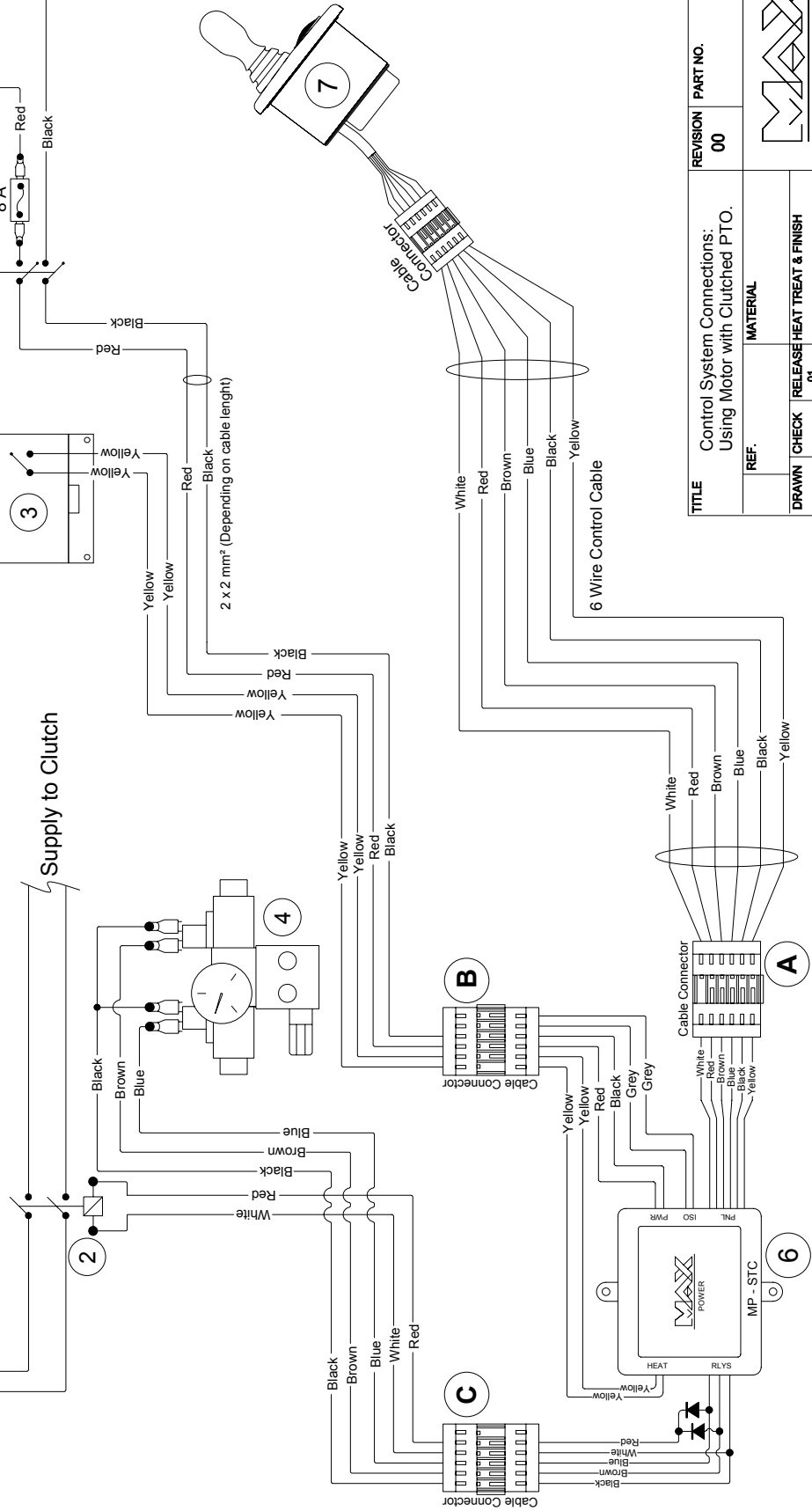
N°	DESCRIPTION	Composite Leg MPHYC1100	Classic Leg MPHY1100	REFERENCES
3	Motor fixing bolts	1	4	MPOP5240
4	Hydraulic motor	1	1	MPHY 6010
5	Adapter plate	1	1	MPHY 5012
8	Upper drive coupling hydraulic model	1	1	MP 205027
10	Rubber coupling	1	1	MP 205023
11	Drive key	1	1	MP11 5010
12	Lower drive coupling	1	1	MP 205025
13	Motor support	1	1	MP118019
15	Composite Drive Leg	1		MP11 8100
16	Drive shaft seal		1	MPOP 5540
17	Drive shaft		1	MPOP 5420
18	Upper bearing		1	MPOP 5430
19	Lower bearing		1	MPOP 5431
20	Upper gear		1	MPOP 5080
21	Clip		1	MP11 5030
22	Composite Fixing Bolts	2		MP114010
22	Fixing screw		2	MPOP 5490
23	Fibre joint leg / tunnel 1,5 mm	1	1	MPOP 2061
24	Leg housing		1	MPOP 5450
25	Propeller D 250	2	2	MPOP 5400
26	Propeller nut	2	2	MPOP 5410
27	Propeller drive pin	2	2	MPOP 5530
28	Oil seal		2	MPOP 5520
29	Screw Cap		4	MPOP 5480
30	Propeller drive shaft		1	MP13 5010
31	Shaft key		1	MPOP 5470
32	Lower drive gear		1	MPOP 5090
33	Shim		2	MPOP 5500
34	Propeller shaft bearing		2	MPOP 5440
35	O-ring		2	MPOP 5460
36	Cap		2	MPOP 5510
37	Copper washer		1	MPOP 2050
38	Drain plug		1	MPOP 5300
39	Anode		1	MPOP 5390
40	Anode screw		1	MPOP5311
41	Complete classic bronze drive leg		1	MP11 8030



# SUPER POWER 225 HYD





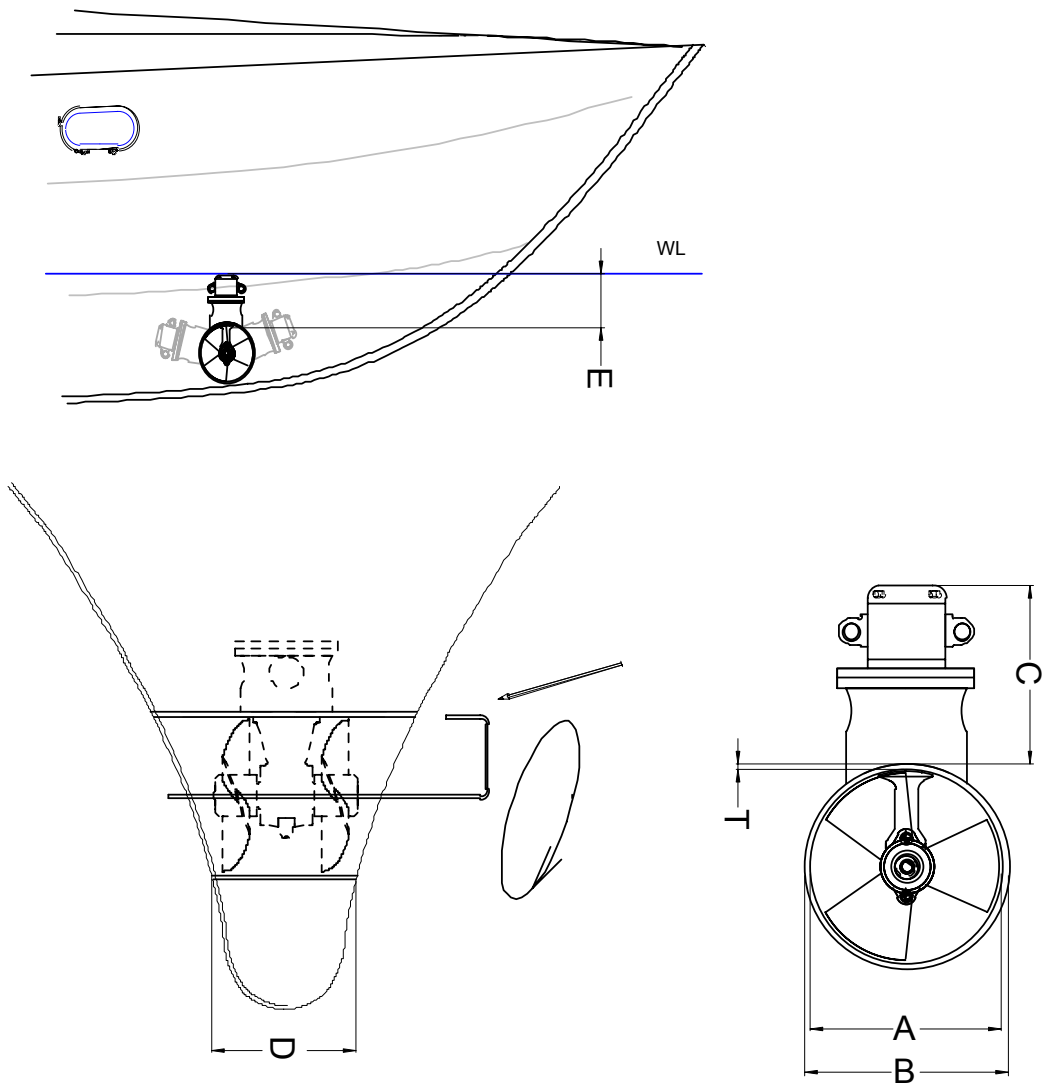
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<b>TITLE</b> Control System Connections: Using Motor with Clutched PTO.				<b>REVISION</b> 00		<b>PART NO.</b>	
<b>REF.</b>				<b>MATERIAL</b>			
<b>DRAWN</b>		<b>CHECK</b>		<b>RELEASE HEAT TREAT &amp; FINISH</b> 01			
<b>DATE</b>		<b>DATE</b>		<b>DATE</b>			
23/04/2004							
							



# **Super Power Hydraulic: Positioning and Measurements**



Model	125	225	325
A	185	250	315
B	197	264	333
C	210	210	220
D	190	220	280
T	6	7	9
E Ideal	185	250	315
E Mini	110	140	160
Weight	9 Kg	12 Kg	20 Kg

## Introduction

The purpose of this document is to set out the terms of warranty cover offered in relation to products purchased by the End User from Max Power or its approved network of resellers.

## 1. Definitions

- **Authorized Repair Number:** The number given by Max Power on reporting a fault with your thruster
- **Dealer:** An authorized Max Power sales centre
- **End User:** The boat supplied with supplied equipment and the owner thereof
- **Installer:** The authorized centre responsible for the installation of your thruster
- **Manufacturer:** supplier of the equipment under warranty
- **Pleasure Craft:** Vessels used for owner's personal use that have no commercial use (i.e Charter boats or work boats)
- **Resellers:** Max Power approved distributors and dealers
- **Serial Number:** Number in upper right hand corner of Warranty document
- **Supplier:** The manufacturer (Max Power)
- **Warranty:** The terms and conditions that are covered by the manufacturer

## 2. Period of Coverage

The equipment manufactured by the Supplier is guaranteed to be free from defective workmanship, components and materials under normal usage conditions for a period of three (3) years from the date of purchase by the End User. This warranty is transferable to subsequent owners of this equipment during the period of coverage.

## 3. Warranty Registration

Register your purchase now at [www.max-power.com](http://www.max-power.com). (NB. proof of purchase must be kept throughout the warranty period)

## 4. Warranty Terms

If the material is used for anything other than for pleasure craft, the guarantee is limited to a six-month period.

**Year 1:** All factory testing, diagnosis, repairs and replacements are performed at no charge to the End User; All parts and up to two hours of labour are covered for repairs and replacements conducted in the field.

**Year 2 & 3:** All factory testing, diagnosis, repairs and replacements are performed at no charge to the End User.

This excludes any damage or faults occurring from normal wear and tear on the following items: engine, oil seals, relay contacts (If warranty is registered within the 3 month period following installation)

## 5. Warranty Exclusions

- Damage due to modifications or installation contrary to published specifications
- Cost of hauling the boat
- Damage due to repairs performed by an unauthorized service centre
- Damage due to lack of normal maintenance services
- Damage due to water
- Parts replaced due to normal wear and tear
- Repairs performed without knowledge of manufacturer (please contact dealer to receive Repair Authorization Number)
- Tampering of equipment by the End User
- Cost of travel to and from the job site
- Cost of economic loss, including injury to any person, damage to property, loss of income or profit, communication, lodging, inconvenience
- Consequential damage due to failure, including those arising from collision with other vessels or objects

## 6. Procedural Guidelines

PLEASE VIEW THE TROUBLE SHOOTING LIST ON THE MANUAL OF YOUR PRODUCT TO ASCERTAIN OR SOLVE ORIGIN OF PROBLEM PRIOR TO CONTACTING THE DEALER/INSTALLER

1. Contact your dealer/installer to report the problem.
  - If you do not know who this is, contact the nearest Max Power distributor
  - If you are in foreign waters, please contact the nearest Max Power distributor
2. Ensure you have your serial number and model number to hand (top right hand corner of warranty)
3. Dealer/Installer will come to site to decipher the cause of the fault
4. If the cause of fault is due to a manufacturing problem the dealer will contact Max Power to receive Repair Authorization Number.
5. If the problem is due to an installation error please contact your installer.

IF POSSIBLE: PLEASE TAKE PHOTOGRAPHS OF THE THRUSTER TO SHOW PROBLEM

## 7. Service Centers

Please go online [www.max-power.com](http://www.max-power.com) to find the authorized service station of your area.

The warranty as outlined above is only applicable to Max Power manufactured thrusters and optional equipment as used in marine pleasure industry. The supplier holds the exclusive right to test the product and determine whether it is defective